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How do loss- and restoration-oriented coping change across time? A prospective study on adjustment following spousal bereavement

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How do loss- and restoration-oriented coping change across time? A prospective study on adjustment following spousal bereavement

Background and objectives: According to the Dual Process Model (DPM), shifting between loss-oriented (LO) and restoration-oriented (RO) coping is essential for adjustment following bereavement. However, knowledge about how LO and RO coping change over time and how such changes are related to adjustment is missing. With a prospective design this study investigated 1) relations between levels of LO/RO coping and selected outcomes and 2) changes in LO/RO coping across time and their relations to adjustment.

Methods: A sample of 145 spousal bereaved individuals completed questionnaires measuring coping with grief, grief symptoms, positive affect, and attachment orientation approximately 2-3 months (baseline) and 7 months (follow-up) post-loss.

Results: High usage of LO coping was associated with poorer outcomes and high usage of RO coping was associated with better outcomes at both baseline and follow-up. Individuals generally shifted towards more RO coping across time and those who exhibited this shift showed lower levels of grief at follow-up compared to individuals who changed towards more LO coping across time.

Conclusions: Individuals showing more RO coping reported better adjustment both early and later in the bereavement process. Changes in coping orientation over time might be useful for understanding complicated grief reactions following loss.

Keywords: adjustment; bereavement; coping; dual process model; grief; prospective

Background and objectives

Bereavement, defined as the loss of a loved one (Shear & Skritskaya, 2012), is one of the most difficult life experiences and the loss of a spouse is especially painful and can have profound effects on the bereaved individual's physical and mental health (e.g., Elwert & Christakis, 2008; Holmes & Rahe, 1967; Kersting et al., 2011; Shear & Skritskaya, 2012). Long-term complications – such as decreased positive affect, health-risk behaviors, poor sleep quality, and functionally impairing grief

symptoms – are common following spousal bereavement (Lundorff, Holmgren, Zachariae, Farver-Vestergaard, & O'Connor, 2017; Prigerson et al., 2009; Richardson & Balaswamy, 2001; Stahl & Schulz, 2014; Thomsen, Lundorff, Damkier, & O'Connor, 2018). Adaptive coping strategies are especially important in times of distress. Therefore, it is important to investigate the coping processes of individuals who adjust better following spousal loss.

According to earlier theories, adaptive coping with bereavement entailed engagement in "grief work", involving a focus on the absence of the deceased, reminiscence about one's life together, and thoughts associated with the circumstances of the loss (Bowlby, 1980; Freud, 1922). Nevertheless, empirical support for the grief work model, which mainly emphasize coping as confrontation with loss-related issues, is scarce (Bonanno & Kaltman, 1999; Wortman & Silver, 1989). To better account for the coping processes involved in bereavement, Stroebe and Schut (1999) proposed the Dual Process Model of Coping with Bereavement (DPM).

The DPM emphasizes how coping with bereavement entails two coexisting processes that deal with different types of stressors, namely loss-oriented (LO) and restoration-oriented (RO) coping (see Stroebe & Schut, 1999, 2008, 2010). LO coping directly focuses on the stressors associated with the loss itself. This orientation, containing grief work as an important component, typically includes rumination, yearning, and reappraisal of the meaning of the loss and involves confrontation with grief-related feelings and behaviors (Stroebe & Schut, 1999). Conversely, RO coping refers to processes dealing with secondary stressors related to the loss and one's new status as a widow(er). This orientation includes focusing on the life changes the loss has caused, mastery of novel skills, meeting new role expectations, and addressing unknown challenges (Stroebe & Schut, 1999). According to the DPM, adaptive coping with bereavement is not a one-sided process of working through grief but rather entails oscillation between LO and RO coping (Stroebe &

Schut, 1999, 2010). Hereby, the bereft at times confronts and at other times avoids different stressors of grief, which ensures adjustment to the loss and life without the deceased (Stroebe & Schut, 1999). Oscillation functions as a kind of dosage mechanism, making it possible to relate to the loss in manageable doses. Over time, the balance between LO and RO coping processes is assumed to shift, such that bereaved individuals generally engage in more LO activities during the early stages of bereavement and more RO activities later (Stroebe & Schut, 1999). Similarly, the DPM provides a useful framework for understanding non-adaptive coping and complications following bereavement. In these cases, the bereaved individual experiences "disturbances of oscillation" (Stroebe & Schut, 1999, p. 217) between LO and RO coping, hence the expression of each orientation becomes unbalanced. Some individuals may be stuck in a loop of yearning for the deceased so the loss becomes the major focus of their life (overly LO), whereas others mostly avoid any confrontation with the reality of the loss and carries on as if nothing happened (overly RO). Consequently, the oscillation between the loss- and restoration-orientation, thought to reflect adaptive coping, is distorted.

Since its formulation, the DPM has led to considerable advances within our theoretical and clinical understanding of normal and complicated grief reactions. On a theoretical level, links between patterns of attachment and grief have been formulated within a DPM-framework, suggesting that secure attachment is associated with flexible oscillation between LO and RO coping and normal grief reactions, while insecure attachment disturbs the oscillation and complicates the process of grief (see Stroebe, Schut, & Boerner, 2010 for an overview). This is congruent with results from studies where avoidant and anxious attachment are generally associated with poorer bereavement adjustment (e.g., Boelen & Klugkist, 2011; Currier et al., 2015). Moreover, assumptions behind the DPM have been found compatible with other more cognitively- and culturally-oriented understandings of grief (see Boelen, van den Hout, & van den Bout, 2006;

Rosenblatt, 2008; Stroebe & Schut, 2010). On a clinical level, the DPM has inspired the

development of different therapeutic approaches to treat complicated grief reactions. These

approaches target loss- and restoration-focused coping and aim to facilitate oscillation between the

two coping processes, presumed to be missing for individuals experiencing complications in the

bereavement process. Studies have shown that these treatment approaches are effective (e.g., Lund,

Caserta, Utz, & de Vries, 2010; Newsom et al., 2017; Shear et al., 2014), thus further supporting

DPM as a valid framework for understanding reactions following bereavement.

Studies examining loss- and restoration-oriented coping

Studies testing the overall assumptions behind the DPM framework have found the model able to

account for different types of losses, grieving experiences at different ages, gender differences in

grieving, as well as inter- and intrapersonal processes relevant for adjustment following

bereavement (e.g., Bennett, Gibbons, & MacKenzie-Smith, 2010; Harper, Oconnor, & Ocarroll,

2015; Richardson, 2007; Richardson & Balaswamy, 2001; Wijngaards-de Meij et al., 2008). In an

effort to directly measure LO and RO coping processes and the oscillation between them, Caserta

and Lund (2007) developed the Inventory of Daily Widowed Life (IDWL). The IDWL consists of

an LO- and an RO-subscale and the authors suggest the scale can assess oscillation balance, which

they conceptualize as the degree to which the bereaved person engages in equal amounts of both

coping processes. The psychometric properties of the IDWL were tested by having two subsamples

of recently (3.5 months post-loss) and long-term (13.1 months post-loss) widowed individuals

complete the questionnaire. Supporting the assumptions behind the DPM, Caserta and Lund (2007)

found a greater emphasis on LO coping in the recently bereaved subsample and a greater emphasis

on RO coping in the long-term bereaved subsample. In continuation of this, the long-term bereaved

subsample shower higher RO coping compared to the recently bereaved subsample (Caserta &

Lund, 2007). When controlling for length of widowhood, higher LO was associated with greater

levels of grief, depression, and loneliness, while higher RO were associated with greater feelings of bereavement coping self-efficacy (Caserta & Lund, 2007). Other studies using the IDWL have also found RO coping, rather than oscillation balance, to be related to more adaptive outcomes such as lower grief, less negative appraisal, and greater stress-related growth (e.g., Caserta, Lund, Utz, & De Vries, 2009; Delespaux, Ryckebosch-Dayez, Heeren, & Zech, 2013).

According to the DPM, adaptive coping entails both LO and RO coping (Stroebe & Schut, 1999, 2010) why a curvilinear relation might be expected between oscillation balance as captured by the IDWL and adjustment outcomes. The empirical findings, however, indicate a largely linear pattern, suggesting that adaptive oscillation may not entail equal amounts of RO and LO, but rather coping with a larger RO engagement. It is also possible that oscillation balance as measured by the IDWL, which entails subtracting the two types of coping from each other, simply reflects the momentary relationship between LO and RO coping rather than actual oscillation. In addition, the studies using the IDWL are limited by their cross-sectional nature and it can be questioned whether these studies fully capture the dynamic, regulatory coping process of oscillation (Stroebe & Schut, 1999). Therefore, knowledge of how coping processes change over time and how such changes are related to adjustment is lacking. Further research is needed to examine adaptiveness of LO and RO coping across time.

In addition to looking at levels of RO and LO coping, the experience of controlling shifts between the two coping orientations may be relevant to adjustment. It could be hypothesized that a sense of oscillation control would enable the bereaved person to shift between LO and RO processes when they feel a need for one type of coping effort over the other (Caserta & Lund, 2007). This would be congruent with the broader literature that testament to the positive effects of perceived control on well-being (e.g., de Quadros-Wander, McGillivray, & Broadbent, 2014; Lang & Heckhausen, 2001; Ruthig, Chipperfield, Perry, Newall, & Swift, 2007). Thus, whether one

experience oscillation control might be a valuable indicator of outcomes in addition to the actual level of RO or LO coping.

The present study

Given the recent inclusion of prolonged grief disorder in the *International Classification of Diseases* (World Health Organization, 2019), investigating how individuals adaptively balance between levels of LO and RO coping has important clinical relevance that can inform further development of grief interventions. In an attempt to address the issues outlined above and supplement existing cross-sectional findings, the present study examined the associations between aspects of coping and well-being prospectively.

Aim 1 was to investigate the relationship between coping orientation and adjustment outcomes over time. We examined this in several ways. First, we formed subgroups of participants based on their LO and RO profiles and investigated the subgroups' levels of prolonged grief symptoms and positive affect at both baseline and follow-up. We also examined how participants' coping orientation was related to levels of avoidant and anxious attachment. As adaptive coping according to the DPM entails both LO and RO coping, we explored which degree of balance between the two coping orientations was associated with the lowest level of grief, highest level of positive affect as well as lowest levels of anxious and avoidant attachment both early and later in the bereavement process. Second, at a more exploratory level, we investigated whether perceived control of oscillation between LO and RO was related to coping orientation. Third, we assessed how different aspects of coping (LO coping, RO coping, balance between LO/RO coping, and oscillation control) predicted later outcomes, controlling for baseline outcome levels.

Aim 2 was to examine how coping orientation change over time and how such changes relate to adjustment outcomes. Based on the DPM and the previous cross-sectional study by Caserta

and Lund (2007), we expected LO coping to decrease and RO coping to increase from baseline to follow-up. On the level of the individual, we expected that over time a majority of individuals would engage in more RO coping and a minority of individuals would engage in more LO coping. We explored how such movements over time related to grief, positive affect, and oscillation control.

Methods

Participants and procedures

Adults (men and women over 18 years) who had recently lost their spouse were recruited with the help of Palliative Care Team Funen, Odense University Hospital. As part of their standard follow-up procedures, the staff identified individuals who met inclusion criteria and contacted them by phone with information on the study. When 2-3 months had passed since the loss, individuals who had agreed to participate received a questionnaire and were asked to complete it in their own time. If participants had not returned the questionnaire after three weeks, they were sent a reminder. Approximately 7 months after their loss, those who had returned the baseline questionnaire received a follow-up questionnaire. Informed consent was obtained from all participants prior to participation. The study followed the ethical principles for research on human participants described in the Declaration of Helsinki and was approved by the Danish Data Protection Agency [registration number: 2014-41-2725].

Two hundred and eighty-one individuals were invited to join the study and 239 agreed to participate. Due to drop-out, 182 (76.2%) participants completed the first questionnaire, while 155 (85.2%) completed the follow-up questionnaire. As the main focus of the present study is coping orientation, the following analyses are based on the 145 participants who completed the IDWL-part of the questionnaire at baseline.

Measures

The self-administered questionnaires contained bereavement-related and demographic background questions as well as scales measuring LO and RO coping, symptoms of grief, positive affect, attachment orientation, and a range of other questions not relevant to the present study[1].

Loss and restoration oriented-coping

We assessed four aspects of coping, namely degree of LO coping, degree of RO coping, balance between LO and RO coping, and control over oscillation. Participants' degree of LO and RO coping processes were assessed with the Inventory of Daily Widowed Life (IDWL, Caserta & Lund 2007). The IDWL includes 22 questions that measure how often the respondent has been involved in LO coping activities (e.g., "Looking at old photographs and other reminders of my spouse" and "Being preoccupied with my situation") and RO coping activities (e.g., "Attending to my own health-related needs" and "Visiting or doing things with others") over the past week (1=rarely or not at all, 4=almost always). In this study, Cronbach's alphas at baseline/follow-up were .85/.84 [LO-subscale] and .51/.68 [RO-subscale].

Coping balance was calculated by subtracting the participants' score on the LO-subscale of IDWL (ranging from 11 [low] to 44 [high]) from the RO-subscale of the IDWL (ranging from 11 [low] to 44 [high]; see Caserta & Lund, 2007). This resulted in a balance score ranging from -33 (exclusively LO) to +33 (exclusively RO) and where a score of 0 entailed equal amounts of LO and RO coping (Caserta & Lund, 2007).

As suggested by Caserta and Lund (2007), we added an item that tapped into the participants' perceived control over oscillation. We asked participants to indicate "If they were able to freely control shifts between feelings concerning their loss (i.e., LO) and daily life without the

deceased (i.e., RO)" on a 5-point Likert scale, ranging from 1 (no control) to 5 (full control).

Symptoms of grief

Symptoms of grief were measured with the Prolonged Grief-13 (PG-13), which is a 13-item scale assessing symptoms of prolonged grief disorder, as put forth by Prigerson et al. (2009). Examples of questions are: "In the past month, how often have you felt yourself longing or yearning for the person you lost?" and "Do you feel that life is unfulfilling, empty, or meaningless since your loss?" Eleven items are evaluated on 5-point scales in relation to occurrence and impairment of the symptoms (1=not at all, 5=several times a day/overwhelmingly). For the purpose of this study, PG-13 was treated as a continuous scale and we did not consider the dichotomous items addressing functional impairment and timing of the loss. The remaining 11 items showed good internal reliability at both time points (Cronbach's alphas=.88 [baseline] and .89 [follow-up]).

Positive affect

The subscale for Positive Affect in the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was used to assess degree of positive affect. The subscale consists of ten positive emotions and participants indicate the extent to which they have experienced each emotion within the last week on a scale of 1 (very little/not at all) to 5 (extremely much). Items were summed to form a total with higher scores indicating more positive affect. The PANAS has been widely used and has shown good psychometric properties, recently in a Danish context (Olesen, Thomsen, & O'Toole, 2015). The scale also demonstrated excellent internal reliability in the current study (Cronbach's alphas=.89 [baseline] and .92 [follow-up]).

Attachment orientation

Attachment orientation was measured with the short version of Experiences in Close Relationships

Scale (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007). The ECR-S contains 12 statements

(e.g., "I want to get close to my partner, but I keep pulling back" and "I need a lot of reassurance

that I am loved by my partner") used to identify the degree of avoidant and anxious attachment

orientation in adult, romantic relationships (Wei et al., 2007). In the current sample, the Cronbach's

alphas at baseline/follow-up were .65/.56 (avoidance dimension) and .65/.71 (anxiety dimension).

Statistical analyses

For all standardized scales (i.e., IDWL, PG-13, PANAS, ECR-S), missing items were substituted

with the mean of the remaining completed items on the scale, if the participant had 50% or fewer

missing items (Schafer & Graham, 2002).

To investigate the relationship between coping and outcomes, we followed procedures

presented by the developers of the IDWL although with one adjustment. Instead of understanding

the relation between RO and LO coping as 'oscillation balance' (Caserta & Lund, 2007, p. 510),

we see it as 'coping balance' given that our survey-based study are not able to capture actual

engagement in oscillation, but can only inform us of the momentary balance between the two

coping orientations. A coping balance with equal amounts of LO and RO coping is centered around

0 on the IDWL and we constructed subgroups based upon standard deviation units above/below this

center point. The standard deviations for coping balance were 6.0 at baseline and 7.7 (rounded up to

8.0) at follow-up (see Table 4), which were used to create the following balance subgroups: Those

whose balance scores were >1 SD unit below 0 (scores <–6 [baseline] and scores <–8 [follow-up])

were labeled 'primarily loss-oriented' and those with balance scores between 0.5 and 1 SD below 0

(score range –6 to –3 [baseline] and score range –8 to –4 [follow-up]) were considered 'moderately

loss-oriented'. A 'relatively balanced' coping process was indicated by a score close to 0 and a

distance of <±0.5 SD (score range –2.99 to +2.99 [baseline] and score range –3.99 to +3.99 [follow-

up]). 'Moderately restoration-oriented' individuals had balance scores between 0.5 and 1 SD above

0 (score range +3 to +6 [baseline] and score range +4 to +8 [follow-up]), whereas balance scores >1

SD above 0 (scores >+6 [baseline] and scores >+8 [follow-up]) represented 'primarily restoration-

oriented' coping. Coping balance for the entire sample ranged from -20 to +16 (baseline) and -22 to

+19 (follow-up). We conducted moderation analyses to account for possible differences between

individuals showing minimum LO and minimum RO (balance score of zero) and individuals

showing maximum LO and maximum RO (who would also show a balance score of zero). In these

analyses, LO and RO scores were the independent variable and moderator, respectively, and

adjustment outcomes (i.e., grief and positive affect) were the dependent variables.

We used chi-square tests and ANOVAs to examine whether individuals assigned to the

coping balance subgroups differed in terms of socio-demographic (i.e., gender, age, level of

education, source of income, and years of cohabitation) and loss-related information (i.e., length of

spouse's sickness and time since loss). We also used ANOVAs to examine whether the coping

balance subgroups differed in their level of grief, positive affect, avoidant and anxious attachment

orientation, and oscillation control. Least Significant Difference (LSD) post-hoc tests were run to

test for significant ($p<.05$) between-group differences. We used stepwise multiple regressions to

predict follow-up outcomes (grief and positive affect) from the coping measures, while controlling

for baseline outcome levels.

To examine how coping orientation change over time, we performed paired samples t-tests

to investigate whether there were significant differences in IDWL sub-scores (i.e., LO-subscale,

RO-subscale, coping balance, and oscillation control) between baseline and follow-up. Finally, to

explore within-person patterns across time, we mapped participants' subgroup at baseline against

their follow-up subgroup. Afterwards, we used t-tests to examine differences in outcomes between

individuals who shifted to a more RO or a more LO subgroup, respectively, across time.

Results

Characteristics of the sample

Table 1 provides demographic and bereavement-related information of participants (N=145). As shown, participants' age averaged at 65.1 years (SD=9.6) and 40% of the sample were men. On average, participants and their deceased spouses had cohabited for 35.8 years (SD=15.0) and time since loss when completing the first questionnaire was 2.5 months (SD=0.6). At baseline, 145 persons completed the IDWL and of those, 120 participants completed the IDWL at follow-up. Comparative-analyses showed that participants who dropped out of the study between baseline and follow-up scored higher on LO, t(143)=2.14, p=.034, d=.46, compared to participants who remained in the study. There were no significant differences on the remaining psychological variables or on age (t(142)=-1.94, p=.055), gender (χ^2(1)=.81, p=.369), or education (χ^2(4)=2.40, p=.663).

Coping balance subgroups were created based upon standard deviation units above and below zero, resulting in the following subgroup distributions (baseline/follow-up): 27/9 participants were primarily LO, 43/18 participants were moderately LO, 42/48 participants were in relative balance, 19/24 participants were moderately RO, and 14/21 participants were primarily RO. Chi-square tests and one-way ANOVAs (also shown in Table 1) found no statistically significant differences between the coping balance subgroups with respect to demographic and loss-related characteristics at either baseline or follow-up (all ps>.05).

Results related to aim 1: Relations between coping and adjustment outcomes

One-way ANOVAs showed significant differences in levels of grief, positive affect, anxious attachment orientation, and oscillation control between coping balance subgroups at baseline (see Table 2). Post-hoc tests found that the primarily loss-oriented subgroup showed the highest level of grief and significantly differed from all other subgroups. This group also showed the lowest level of positive affect. Conversely, the primarily restoration-oriented group showed the lowest level of grief and the highest level of positive affect. The relative balanced subgroup scored highest on both avoidant and anxious attachment orientations compared to all other subgroups. Regarding oscillation control, the primarily restoration-oriented subgroup scored highest, significantly differing from the primarily and moderately loss-oriented subgroups.

At follow-up, the coping balance subgroups significantly differed in their levels of grief, positive affect, and oscillation control. Replicating the baseline findings, post-hoc tests showed that the primarily loss-oriented subgroup showed the highest level of grief, while the primarily restoration-oriented group showed the lowest level of grief (both differing at $p<.05$ from all other subgroups). Moreover, the primarily loss-oriented subgroup showed the lowest level of positive affect, while the primarily restoration-oriented subgroup showed the highest level of positive affect. The primarily restoration-oriented subgroup also showed the highest level of oscillation control, significantly differing from all other subgroups (also shown in Table 2).

To test the robustness of these sub-group analyses, namely whether the subgroups masks variations in coping levels (i.e., potential differences between individuals receiving the same balance score yet showing different coping profiles), we conducted a number of moderation analyses. We did not find statistically significant interaction effects between LO*RO on any of the tested outcomes at neither baseline nor follow-up (all $ps>.05$). Only the interaction effect of

RO*LO coping and positive affect at baseline was near-significant (p=.056), indicating that a high

RO score may act as a buffer for the negative relation between LO and positive affect.

To examine whether coping predicted outcomes at follow-up (grief and positive affect) while

controlling for baseline levels of outcomes, we conducted four stepwise multiple regressions. We

entered baseline IDWL sub-scores (LO coping, RO coping, coping balance, oscillation control) at

step 1 and baseline outcomes (grief and positive affect) at step 2 (see Table 3). At step 1, all IDWL

sub-scores emerged as significant predictors, as greater level of grief at follow-up was predicted by

higher LO, lower RO, lower coping balance score (i.e., predominantly LO), and lower oscillation

control – while greater level of positive affect at follow-up was predicted by lower LO, higher RO,

higher coping balance score (i.e., predominantly RO), and higher oscillation control. When

controlling for baseline levels of grief and positive affect, however, none of the coping variables

appeared as significant predictors in these models (all ps>.05).

Results related to aim 2: Changes in coping processes across time and adjustment outcomes

Table 4 displays baseline and follow-up comparisons of the four IDWL sub-scores (LO-subscale,

RO-subscale, coping balance, and oscillation control). In line with expectations, paired samples t-

tests found significant decreases in LO and significant increases in RO between baseline and

follow-up. On average, the sample demonstrated a negative coping balance score at baseline (i.e.,

predominantly LO) and a positive balance score at follow-up (i.e., predominantly RO) and these

scores significantly differed. We did not detect a statistically significant difference between baseline

and follow-up oscillation control.

Finally, to assess change and stability in coping balance across time, we plotted the participants' balance subgroup at baseline against their balance subgroup at follow-up. As expected, participants generally moved from a predominately LO coping focus (i.e., negative balance score) at baseline to a predominately RO coping focus (i.e., positive balance score) at follow-up. We found that 18.3% of the participants (n=22) shifted to a more LO subgroup at follow-up compared to baseline, 30% of the participants (n=36) remained in the same coping subgroup, while 51.7% of the participants (n=62) shifted to a more RO subgroup at follow-up compared to baseline (see Figure 1).

We then investigated how outcomes were associated with these within-person shifts by comparing those who became more LO (n=22) or remained LO (n=12) across time with those who became more RO (n=62) or remained RO (n=10) across time. We found that participants who moved in the direction of more RO coping across time (or remained RO) showed significantly lower grief, $t(102)$=-2.27, p=.026, d=0.47, and significantly higher oscillation control, $t(98)$=3.03, p=.003, d=0.64, at follow-up compared to participants who showed more LO coping across time (or remained LO). There were no significant difference on level of positive affect ($t(101)$=1.42, p=.160, d=0.31).

Discussion

This study examined the assumptions of the DPM framework using the IDWL in a prospective study design. We sought to expand the existing knowledge concerning coping with bereavement by investigating 1) associations between aspects of coping and adjustment outcomes both cross-sectionally and prospectively as well as 2) changes in coping orientation across time and associations between such changes and adjustment outcomes.

Loss- and restoration-oriented coping in relation to outcomes

Regarding the study's first aim, our subgroup analyses based on participants' LO and RO profiles did not generally support the idea that balance between LO and RO, when conceptualized as equal amounts of LO and RO, was associated with better outcomes. In general, the primarily restoration-oriented subgroup presented the most adaptive adjustment outcomes (i.e., lowest grief and highest positive affect) at both time points (see Table 2). Moreover, those engaged in primarily loss-oriented coping typically reported significantly less favorable adjustment outcomes compared to all other subgroups. These findings correspond with Caserta and Lund (2007) who also found a largely linear pattern in the mean outcome scores where progressively more RO coping were associated with increasingly better outcomes. Thus, it seems coping that favors RO is associated with the most favorable bereavement outcome. This finding is somewhat inconsistent with the assumptions behind the DPM in which "pathological forms of grieving" (Stroebe & Schut, 1999, p. 217) are defined as both epitomized LO as well as epitomized RO coping. It is possible that adaptive coping does not encompass equal amounts of LO and RO, but rather a higher engagement in RO coping and with an increasing RO focus over time. Another possibility is that the IDWL might not fully capture the negative aspects of RO coping as conceptualized by the DPM (such as denial, avoidance, and inhibition), but focuses more on the positive aspects of RO coping (such as engagement, occupation, and socialization). Another possible explanation for the findings is that the LO-subscale has a large overlap with core grief symptoms (such as yearning and preoccupation) and that this item-overlap explains the associations between more severe grief reactions and LO coping. Future research into dual processed coping following bereavement might benefit from focusing on positive as well as negative aspects of both loss- and restoration-orientation.

Concerning the relation between attachment and coping, we found that the relatively balanced subgroup compared to all other subgroups scored highest on avoidant attachment

orientation at both baseline and follow-up and highest on anxious attachment orientation at baseline (see Table 2). Given the assumed relation between secure attachment and oscillation between LO and RO coping (Stroebe, Schut, & Stroebe, 2005), it is noteworthy that individuals who reported similar levels of RO and LO coping (i.e., balanced coping) also reported the highest levels of anxious and avoidant attachment. On one side, this finding could suggest that the IDWL is not fully able to capture the adaptiveness of oscillation (perhaps because the maladaptive aspects of RO coping are not captured or because active oscillation is not measured using the IDWL). On the other side, there might be some potentially protective features associated with avoidant or anxious attachment in the early process of coping with a trauma (e.g., Arikan & Karanci, 2012; Fraley & Bonanno, 2004; Mancini, Robinaugh, Shear, & Bonanno, 2009). Overall, the curvilinear tendency identified between balance subgroups and attachment orientation was unexpected, especially in light of the linear pattern found between coping orientation and outcomes such as grief and positive affect, suggesting a need for further study in this area.

Regarding prediction of grief and positive affect at follow-up, we found that all baseline IDWL sub-scores (i.e., LO-subscale, RO-subscale, coping balance, and oscillation control) were significant predictors, consistent with the pattern that higher RO and lower LO coping is related to better outcomes. After controlling for these same adjustment outcomes at baseline, none of the coping variables appeared as significant predictors. This might indicate that present coping orientation affects present outcomes rather than predicts future outcomes.

Changes in coping processes across time

Concerning our second aim, examining the coping process across time, pairwise comparisons showed that individuals on average reported significantly lower levels of LO and higher levels of RO at follow-up compared to baseline. In addition, we investigated whether there were differences

between recent and more distant bereavement with respect to levels of coping balance (ranging from -33 [exclusively LO] to +33 [exclusively RO]; see Caserta & Lund, 2007). We observed that the coping balance score increased from baseline (*M*=-1.8) compared to follow-up (*M*=1.4), which is in line with the cross-sectional study by Caserta and Lund (2007) whose balance scores also differed between the more recently widowed group (*M*=1.2) compared to the later widowed group (*M*=4.7). If we combine the findings from the two studies, a cautious observation is that coping balance on average moves from a mainly LO focus early following bereavement (-1.8 at 2.5 months post-loss) to a mainly RO focus later (+1.2 at 3.5 months post-loss, +1.4 at 7 months post-loss, and +4.7 at 13.1 months post-loss). This observation is consistent with the pattern of change in LO and RO assumed in the DPM, yet replications by future studies using longitudinal designs with multiple assessment points both early and later in the bereavement process are warranted.

Perceived control of oscillation increased, although not significantly, from baseline to follow-up. Additionally, the prospective analyses indicate that perceived control of oscillation between LO and RO might be associated with better adjustment following bereavement (i.e., lower grief and higher positive affect). While this result was not significant when controlling for baseline levels of grief and positive affect, there might be some positive aspects related to experiencing oscillation control. It might be that individuals capable of controlling the oscillation between coping with loss and restoration stressors, regulate their grieving and amount of overall confrontation in a flexible manner (e.g., taking time off to recover from the emotional strain) and thereby, moderate the stress associated with bereavement. In this view, oscillation control could be understood in terms of a flexibility framework in which successful adaptation, rather than referring to particular coping strategies, concerns whether coping strategies are applied flexibly to correspond with current stressors (e.g., Bonanno, Papa, Lalande, Westphal, & Coifman, 2004; Cheng, 2001). Consistent with this idea, the DPM also views flexibility and oscillation as partly overlapping constructs

(Stroebe et al., 2005, p. 61) and findings indicates that lack of flexibility in the bereavement process relates to negative outcomes (Burton et al., 2012; Gupta & Bonanno, 2011). However, our oscillation control findings are only based on a single-item and the results should be interpreted cautiously. Future research focusing on expanding our knowledge concerning oscillation control might directly investigate relations to flexibility as well as the effect of psychoeducation and awareness exercises as methods to foster oscillation control and flexibility therapeutically.

The plot of coping balance subgroups at baseline against follow-up shows considerable movements in coping balance across time. One fifth of the participants used more LO coping, approximately one fourth stayed in the same balance subgroup, and over half the participants used more RO coping from baseline to follow-up. This finding indicates how LO and RO coping processes and the balance between them changes across time. Given the associations between LO/RO coping and outcomes, the detected movements share similarities with trajectories identified by Bonanno and colleagues (2004, 2002). These trajectories show how some individuals develop more severe bereavement reactions across time, others exhibit resilient trajectories characterized by relative low levels of distress, whilst other individuals experience decrease in severity of bereavement-related distress. In our exploratory analyses, we investigated whether the within-person changes in use of LO and RO over time would be associated with adjustment outcomes. These analyses showed that participants who became more LO or stayed stable in their LO showed higher prolonged grief symptom levels and lower oscillation control at follow-up. Although speculative, this finding suggests that this subgroup might be at risk for developing prolonged grief disorder and future research should focus on changes in coping orientation across time.

Strengths and limitations

The study has several strengths, including its prospective design, a relatively large sample size, the use of standardized measures of symptoms of grief, positive affect, and attachment orientation. Nevertheless, some limitations should be addressed. First, the study only included two assessment times, enabling detection of crude changes in coping orientation, but additional measurement points are needed to capture engagement in oscillation. Future studies using ecological momentary assessment would allow mapping of moment-to-moment oscillation. Second, participants who dropped out between baseline and follow-up scored higher on LO compared to participants who remained in the study. This selective dropout may have resulted in incorrect estimation of the proportion of individuals who stay LO in their coping across time which influence the generalizability of the study's conclusions. Third, some of the measures had low internal reliability, making it more difficult to detect effects. Fourth, handling missing values through mean substitution may decrease variation of scores and potentially increase the odds of detecting a significant effect (Acock, 2005). To test the robustness of our results, we ran the main analyses on a dataset without mean substitution and found results with similar direction and significance level as those reported. Finally, the IDWL has several limitations, which may affect the results. For one, the wording of some items (e.g., "Feeling a bond with my spouse") might be interpreted by participants as a 'feeling' rather than an LO-'activity' which questions the validity of the scale as a measure of coping with bereavement. Also, there is substantial overlap between items on the LO-subscale of the IDWL (e.g., "Yearning for my spouse" and "Thinking about how much I miss my spouse") and symptoms of prolonged grief disorder as assessed by the PG-13, which may account for some at the identified associations between LO coping and grief. In addition, the subtraction method used to capture coping balance is limited as it masks variations in coping levels (i.e., potential differences between individuals scoring low on both RO and LO and individuals scoring high on both

subscales). To address this limitation, we tested whether the relationship between each of the coping orientations and adjustment outcomes were moderated by the other orientation. These analyses did not show a significant interaction effect, indicating that the relations between each coping orientation and adjustment do not change as a function of the other orientation. This further supports the largely linear pattern found in our subgroup analyses (i.e., more LO is associated with higher grief and lower positive affect irrespective of the level of RO, just as more RO is associated with lower grief and higher positive affect irrespective of the level of LO). However, these non-significant results might reflect power issues and future studies with larger samples could examine potential moderating effects to establish the adaptiveness of different levels of LO and RO coping.

Conclusion

This study expands our knowledge of dual process coping following bereavement and increase our understanding of individuals who have difficulties recovering from their loss. It is suggested that higher RO coping and control of the oscillation between LO and RO coping are related to better adjustment following bereavement. Additionally, bereaved individuals generally shifted towards more RO coping over time and individuals who exhibited this shift also showed lower levels of grief at follow-up. These findings indicate that adaptive coping might not encompass equal amounts of LO and RO coping, but rather a higher engagement in RO coping and with an increasing orientation towards restoration over time.

Baseline coping orientation predicted follow-up grief and positive affect, but after controlling for these same adjustment outcomes at baseline, none of the coping variables were significant. The identified within-person changes could explain why the prospective analyses were non-significant; coping orientation at one point might not predict future outcomes. Rather, the way coping develops across time (i.e., longitudinal patterns of coping) may be indicative of future

adjustment. Future studies could use ecological momentary assessment to test this assumption and

increase our understanding of the dynamic oscillation process in coping with bereavement.

Note

1. Results from this study have previously been published (Lundorff, Thomsen, Johannsen,

Damkier, & O'Connor, 2019; Thomsen et al., 2018). There is no overlap between the present and

past publications concerning main hypotheses and analyses.

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Table and figure captions

Table 1. Demographic and bereavement-related information of the participants.

Table 2. Mean outcomes by coping balance subgroup.

Table 3. Stepwise multiple regressions predicting outcomes from Inventory of Daily Widowed Life sub-scores.

Table 4. Inventory of Daily Widowed Life sub-scores and comparison tests.

Figure 1. Plot of baseline subgroups against follow-up subgroups.

Table 1

Demographic and bereavement-related information of the participants

Variables	M (SD) or N (%)	Significance tests[a,b] for differences between coping balance subgroups [baseline]	Significance tests[a,b] for differences between coping balance subgroups [follow-up]
Age	65.1 (9.6)	$F_{(4,139)} = 1.97$	$F_{(4,114)} = 0.92$
Gender		$X^2_{(4)} = 2.85$	$X^2_{(4)} = 2.02$
Female	87 (60.0%)		
Male	58 (40.0%)		
Level of education		$X^2_{(16)} = 25.63^c$	$X^2_{(16)} = 20.52^c$
Elementary school	33 (22.8%)		
High school	12 (8.3%)		
Manual training	47 (32.4%)		
College	43 (29.7%)		
University	6 (4.1%)		
Source of income		$X^2_{(8)} = 6.86^c$	$X^2_{(8)} = 6.37^c$
Salary	37 (25.5%)		
Pension	91 (62.8%)		
Other	9 (6.2%)		
Years of cohabitation	35.8 (15.0)	$F_{(4,139)} = 1.76$	$F_{(4,115)} = 2.08$
Number of children	1.9 (1.1)	$F_{(4,134)} = 0.44$	$F_{(4,112)} = 0.27$
Length of sickness (months)	22.3 (35.0)	$F_{(4,137)} = 0.60$	$F_{(4,113)} = 1.82$
Time since death (months) [baseline]	2.5 (0.6)	$F_{(4,135)} = 0.42$	$F_{(4,113)} = 0.56$

Note. N varies due to missing values.

* $p < .05$.

[a] *F*-ratio based on one-way analysis of variance for continuous variables.

[b] chi-square analysis for categorical variables.

[c] likelihood ratio reported for analyses with >20% of cells with expected frequencies less than 5.

Table 2
Mean outcomes by coping balance subgroup

Outcome / Coping balance subgroup	Baseline M (SD)	F-ratio[a] (df)	Follow-up M (SD)	F-ratio (df)
Grief[b]				
Primarily loss-oriented[c]	37.3 (6.5)[h,i,j,k]	24.87*** (4,136)	37.2 (8.4)[h,i,j,k]	18.33*** (4,112)
Moderately loss-oriented[d]	33.3 (6.8)[h,l,m,n]		30.4 (6.4)[h,l,m]	
Relative balance[e]	28.4 (7.4)[j,l,o,p]		27.8 (6.4)[i,n]	
Moderately restoration-oriented[f]	23.3 (5.7)[j,m,o]		24.7 (7.2)[j,l,o]	
Primarily restoration-oriented[g]	19.1 (4.9)[k,n,p]		17.4 (4.6)[k,m,n,o]	
Total	29.9 (8.7)		26.3 (8.2)	
Positive affect[b]				
Primarily loss-oriented[c]	26.4 (6.2)[h,i,j]	6.91*** (4,132)	23.1 (8.6)[h,i,j]	8.19*** (4,111)
Moderately loss-oriented[d]	28.6 (6.4)[k,l,m]		28.9 (6.4)[k]	
Relative balance[e]	31.7 (7.2)[h,k,n]		32.1 (6.1)[h,l]	
Moderately restoration-oriented[f]	33.7 (6.3)[j,l]		29.3 (7.4)[i,m]	
Primarily restoration-oriented[g]	36.1 (6.3)[j,m,n]		37.5 (7.1)[i,k,l,m]	
Total	30.5 (7.1)		31.5 (7.6)	
Avoidant attachment orientation[b]				
Primarily loss-oriented[c]	12.8 (3.9)[h]	2.28 (4,137)	11.2 (4.4)[h,j]	1.47 (4,115)
Moderately loss-oriented[d]	12.8 (3.8)[j]		14.8 (4.3)	
Relative balance[e]	15.2 (5.1)[h,j]		15.1 (4.4)[h]	
Moderately restoration-oriented[f]	14.9 (4.3)		14.6 (4.7)	
Primarily restoration-oriented[g]	13.4 (5.2)		14.2 (4.9)	
Total	13.8 (4.5)		14.5 (4.6)	
Anxious attachment orientation[b]				
Primarily loss-oriented[c]	21.7 (5.4)[h]	3.16* (4,136)	23.4 (5.2)	1.26 (4,115)
Moderately loss-oriented[d]	20.6 (5.9)[j]		20.2 (5.2)	
Relative balance[e]	22.4 (5.6)[j,k]		21.9 (6.5)	
Moderately restoration-oriented[f]	18.8 (6.3)[j]		19.0 (5.0)	
Primarily restoration-oriented[g]	16.6 (6.1)[h,i,k]		21.0 (8.0)	
Total	20.7 (6.0)		21.0 (6.3)	
Oscillation control[b]				
Primarily loss-oriented[c]	2.9 (1.0)[h]	2.84* (4,136)	1.9 (0.9)[h,i,j,k]	9.50*** (4,109)
Moderately loss-oriented[d]	2.8 (1.1)[i,j]		2.8 (1.2)[h,l]	
Relative balance[e]	3.3 (1.0)[l]		3.3 (1.1)[i,m]	
Moderately restoration-oriented[f]	3.4 (1.2)		3.5 (1.2)[j,n]	
Primarily restoration-oriented[g]	3.8 (1.1)[h,i,j]		4.4 (0.9)[k,l,m,n]	
Total	3.1 (1.1)		3.3 (1.3)	

* $p<.05$.
*** $p<.001$.

[a] F-ratio based on one-way analysis of variance.

[b] baseline outcome levels and baseline subgroup divisions used for baseline analyses; follow-up outcome levels and follow-up subgroup divisions used for follow-up analyses.

[c] coping balance score > 1 SD below zero (score <−6 [baseline] and score <−8 [follow-up]).

[d] coping balance score ≥ 0.5 SD and ≤1 SD below zero (score range −6 to −3 [baseline] and score range −8 to −4 [follow-up]).

[e] coping balance score < 0.5 SD ±0 (score range −2.99 to +2.99 [baseline] and score range −3.99 to +3.99 [follow-up]).

[f] coping balance score ≥ 0.5 SD and ≤1 SD above zero (score range +3 to +6 [baseline] and score range +8 to +4 [follow-up]).

[g] coping balance score > 1 SD above zero (score >+6 [baseline] and score >+8 [follow-up]).

[h-p] means with common superscripts within each outcome differ at $p<.05$ according to Least Significant Difference (LSD) post-hoc test.

Table 3
Stepwise multiple regressions predicting outcomes from Inventory of Daily Widowed Life sub-scores

Predictor	Grief [follow-up] β	Predictor	Positive affect [follow-up] β
Step 1		Step 1	
LO [baseline]	.51***	LO [baseline]	-.18*
Step 2		Step 2	
LO [baseline]	.12	LO [baseline]	-.08
Grief [baseline]	.62***	Positive affect [baseline]	.67***
Step 1		Step 1	
RO [baseline]	-.21*	RO [baseline]	.35***
Step 2		Step 2	
RO [baseline]	-.06	RO [baseline]	.06
Grief [baseline]	.68***	Positive affect [baseline]	.66***
Step 1		Step 1	
Coping balance [baseline]	-.56***	Coping balance [baseline]	.38***
Step 2		Step 2	
Coping balance [baseline]	-.17	Coping balance [baseline]	.12
Grief [baseline]	.58***	Positive affect [baseline]	.63***
Step 1		Step 1	
Oscillation control [baseline]	-.36***	Oscillation control [baseline]	.34***
Step 2		Step 2	
Oscillation control [baseline]	-.07	Oscillation control [baseline]	.11
Grief [baseline]	.66***	Positive affect [baseline]	.64***

Note. LO = loss-orientation, RO = restoration-orientation.
* $p<.05$.
*** $p<.001$.

Table 4
Inventory of Daily Widowed Life sub-scores and comparison tests

IDWL sub-scores	Baseline		Follow-up		
	Range	M (SD)	Range	M (SD)	Significance tests for differences between baseline and follow-up
Loss-orientation[a]	+18 to +43	29.8 (5.1)	+16 to +41.8[d]	27.3 (5.3)	$t(125) = -5.99$***
Restoration-orientation[a]	+18 to +38	27.9 (3.7)	+15 to +39	28.8 (4.4)	$t(124) = 2.33$*
Coping balance[b]	−20 to +16	−1.8 (6.0)	−22 to +19	1.4 (7.7)	$t(119) = 4.53$***
Oscillation control[c]	+1 to +5	3.1 (1.1)	+1 to +5	3.3 (1.2)	$t(119) = 1.61$

Note. IDWL = Inventory of Daily Widowed Life.
* $p < .05$.
*** $p < .001$.
[a] possible range = +11 to +44.
[b] possible range = −33 (exclusively loss-orientation) to +33 (exclusively restoration-orientation). A score of 0 = equal scores of loss-orientation and restoration-orientation.
[c] possible range = +1 (no control) to +5 (full control).
[d] not an integer due to mean substitution of missing items (Schafer & Graham, 2002).